cardiovascular outcomes, in patients with heart failure after an acute myocardial infarction. Even though the average estimated glomerular filtration rate (eGFR) of these patients was 70 ± 21 ml/min per 1.73 m^2, a large subset of these patients had no established chronic kidney disease (CKD), and data on proteinuria was not available. Only a third of the studied patients had baseline eGFR less than 60 ml/min per 1.73 m^2. Of interest, the subgroup of patients with eGFR <60 ml/min per 1.73 m^2 at baseline were not susceptible to further renal functional deterioration. In addition, the effect of eplerenone on renal function through different CKD stages was not evaluated in this study. Only one patient with worsening renal function was reported to manifest hyperkalemia (>6 mmol/l). Thus, although published after our review was submitted, these newer results of Rossignol *et al.*[3] are consistent with and support the conclusions of our review.

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Urea handling in acute renal failure

To the Editor: Bankir and Yang[1] provided a very thought-provoking account of renal physiology, linking structural and functional details in a new and important way. Their arguments in favor of active urea secretion in pars recta of the proximal tubule seem particularly convincing. As clinicians, we have been used to assessing the relative change of concentrations of urea and creatinine to help in distinguishing pre-renal failure from acute tubular necrosis (ATN). Bankir and Yang[1] now state that in the case of ATN, blood urea nitrogen (BUN) rises significantly more than plasma creatinine in comparison with pre-renal failure. This is not the common interpretation. In a Nephrology Forum in the Journal in 1998, RC Blantz discussed the pathophysiology of pre-renal azotemia and wrote that pre-renal failure in comparison with ATN was characterized by a high ratio of BUN to serum creatinine.[2] Dr Blantz analyzed the overall situation in pre-renal failure as one in which glomerular filtration rate (GFR) and oxygen consumption in the proximal tubule was reduced, citing the concept of Thurau of 'acute renal success' in which the tubuloglomerular feedback protected overworked oxygen-deprived tubules by reducing GFR. Hence, it is entirely consistent with generalized inhibition of active urea secretion as described in the paper by Bankir and Yang. Also, as actual tubular necrosis is in fact a rare finding in 'acute tubular necrosis,'[3] it is to be anticipated that the active urea transport could be less inhibited in the presence of ATN as compared with pre-renal failure. As previously reported,[4,5] this is in fact what has been observed: a low fractional excretion of urea in pre-renal failure ($<35\%$) compared with ATN ($>40\%$).

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The Authors Reply: We are grateful to Ring[1] for his interesting comment about urea and creatinine handling in acute renal failure. He presented more clearly than we did in our paper,[2] the description of the differences between pre-renal failure and acute tubular necrosis (ATN). Actually, in the normal kidney, the fractional excretion of urea (FE_{urea}) depends largely on a combination of influences exerted independently on the proximal and the distal nephron. As already well known since several decades, as shown in Figure 5 of our article,[2] and as re-emphasized by Carvounis *et al.*,[3] a strong urea reabsorption occurs in the distal nephron at low urine flow rates, resulting in a dramatic fall in FE_{urea}.

In pre-renal azotemia, FE_{urea} may be strongly reduced both by a decrease in proximal tubule function due to